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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,503	08/14/2001	Santiago Rodriguez	10014545-1	8089

7590 12/09/2005  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

LEE, TOMMY D

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/928,503	RODRIGUEZ, SANTIAGO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thomas D. Lee	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7-9 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 4-6,10,11 and 16-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 9, 2005 has been entered.

### ***Response to Amendment***

This Office action is responsive to applicant's amendment filed November 9, 2005. Claims 1-20 are pending.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 7, 8 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,709,250 (Takeuchi) in view of U.S. Patent 5,581,358 (Seto).

Regarding claims 1 and 2, Takeuchi discloses a method for correcting a half tone pulse width count, the method comprising: determining the half tone pulse width count (pulse width modulation signal having width T3 utilized as reference modulation signal, another pulse width may be used as reference if pulse width thereof is shorter than the pulse width for one picture element of a black modulation signal (column 3, line 54 –

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column 4, line 22)); determining a half tone level (surface potential of scanned photosensitive member detected (column 4, lines 46-51)); and calculating a corrected half tone pulse width count based on the half tone pulse width count and the half tone level (modulation pulse width for forming halftone image selected in response to detected surface potential and reference pulse width modulation signal (column 4, lines 51-55; column 4, line 63 – column 5, line 58)). At least one of the half tone pulse width count, the half tone level and the corrected half tone pulse width count may be determined for one or more of a pixel, a line, a page, a print job, and a usable lifespan of a toner cartridge (operation of control mode of determining corrected halftone pulse width count (Fig. 3) may be performed between adjacent paper feedings (column 6, lines 14-26)).

Regarding claims 12-15, Takeuchi discloses an apparatus for correcting a half tone width count comprising: a processor system configured to determine the half tone pulse width count, wherein the processor system is further configured to determine a half tone level for the one or more pixels and wherein the processor system is further configured to calculate a corrected half tone pulse width count based on the half tone pulse width count and the half tone level (CPU 20 (Fig. 1) controls determination of a corrected pulse width count as set forth above (column 4, lines 31-59)). The processor system comprises at least one processor associated with one or more of a PC, a print spooler, a printer and a network component, the processor system an application specific integrated circuit contained within the printer (CPU 20 inherently comprising application specific integrated circuitry, associated with an image forming apparatus

(Fig. 1)). The processor is further configured to determine a pulse width count for one or more substantially solid pixels within a print job (noting Fig. 4, period q is a black level image portion of three picture elements (column 6, lines 39-53)).

Takeuchi does not disclose the half tone pulse width count being a measure of the accumulated width of two or more pulses associated with the printing of half tone dots, as now recited in base claims 1 and 12. Seto discloses an information recording apparatus, wherein data of a black pixel which is not subjected to smoothing is recorded while saving toner by controlling the print pulse width or the print pulse number upon recording of the black pixel on the basis of a print density command (abstract). Noting, for example, Figs. 54A-54E (especially 54C and 54D), the accumulated widths of plural pulses within a pixel are increased corresponding to an increase in density level. This feature enables the apparatus to maintain high print quality at areas requiring smoothing, while at the same time decreasing to consumption amount of toner (column 25, line 42 – column 26, line 4). Takeuchi does not provide a feature for decreasing the amount of toner used, and thus it would have been obvious for one of ordinary skill in the art to modify the teaching of Takeuchi by providing such a feature, as disclosed in Seto, so that toner consumption, and thus printing costs associated therewith, may be decreased.

Regarding claims 7 and 8, Takeuchi in view of Seto does not disclose a computer readable medium on which is embedded computer software capable of automatically correcting a halftone pulse width count by performing the steps of above-rejected claims 1 and 2. However, it is well known in the art that any imaging process

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that uses a CPU is capable of receiving a software program within a computer readable medium for performing the imaging process, thereby enabling a user to perform the process on a computer, without the need for specific processing hardware. Therefore, it would have been obvious for one of ordinary skill in the art to provide computer software in a computer readable medium for automatically performing the steps in the rejected claims.

Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi in view of Seto as applied to claims 1 and 7, respectively, above, and further in view of U.S. Patent 5,617,216 (Wada).

Takeuchi in view of Seto does not disclose the use of one of a statistical regression equation and a lookup table for the calculating step, as recited in claims 3 and 9. Wada discloses a method whereby a pulse width in a lookup table is generated on the basis of a gradation value of an objective pixel (column 5, lines 4-16). The use of a lookup table provides a less complicated means for obtaining a pulse width by eliminating the need for performing mathematical operations necessary in Takeuchi for determining the corrected halftone pulse width count. Therefore, it would have been obvious for one of ordinary skill in the art to provide a lookup table, such as disclosed in Wada.

#### ***Allowable Subject Matter***

Claims 4-6, 10, 11 and 16-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: No prior art has been found to disclose or suggest a lookup table based on the statistical regression equation, used in the step for calculating a corrected halftone pulse width count based on the halftone pulse width count and the halftone level, as recited in claims 4 and 10, or the combined steps of determining a pulse width count and calculating a toner usage value based on the pulse width count and the corrected halftone pulse width count, as recited in claims 5, 11 and 16. Claim 6 and 17-20 depend from claims 5 and 16, respectively.

### ***Response to Arguments***

Applicant's arguments filed in response to the prior rejection of the above claims as set forth in the Office action mailed August 23, 2005 have been fully considered but they are not persuasive. These arguments were based on the claims as amended to overcome the prior rejection. The amended claims are rejected for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (571) 272-7436. The examiner can normally be reached on Monday-Friday, 7:30-5:00, alternate Fridays off.

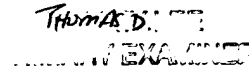
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be "Thomas D. [unclear]".

tdl  
December 7, 2005

A typed name and title in black ink, reading "THOMAS D. [unclear]".